

JPRS-UEA-84-016

16 July 1984

# USSR Report

ECONOMIC AFFAIRS



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## USSR REPORT ECONOMIC AFFAIRS

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## ECONOMIC POLICY, ORGANIZATION AND MANAGEMENT

### URGENT ECONOMIC TASKS STRESSED AT PLENUM

Moscow PLANOVVOYE KHOZYAYSTVO in Russian No 3, Mar 84 pp 24-28

[Article: "Following the Course of the 26th CPSU Congress"]

[Text] The Extraordinary Plenum of the CPSU Central Committee, which took place on 13 February 1984, emphasized that communists and all Soviet people are joining their ranks even more closely around the Leninist CPSU Central Committee and the Politburo of the Central Committee and are fully resolved to struggle wholeheartedly to implement the party's Leninist domestic and foreign policy.

Owing to the selfless effort of the Soviet people to carry out the decisions of the 26th Party Congress, our country is confidently following the path of economic and social progress.

Evaluating the political significance of this fact in his speech at the Extraordinary Plenum of the CPSU Central Committee, K. U. Chernenko, general secretary of the CPSU Central Committee, emphasized: "The ability to discern and support the people's initiative in the broadest sense--all the way from a proprietary, creative approach in the workplace to active participation in the management of the state and society--this is the greatest and, it can be said, the inexhaustible reserve of our progress. Our economy owes every one of its major accomplishments to one or another degree to the creative initiatives of labor collectives and to their own 'counterplans'."

The all-round support of the nation's working people for the party's domestic and foreign policy was specifically expressed in the socialist competition for the fulfillment and overfulfillment of plan targets for 1984, in the creative enthusiasm that pervaded labor collectives and in the adoption of higher socialist pledges everywhere. The businesslike response of the working people to the decisions of the December (1983) and Extraordinary Plenum of the CPSU Central Committee is particularly important because we must maintain our momentum, the general mood regarding practical matters and develop and stabilize positive tendencies more actively.

As we know, measures taken by the party to improve economic management and to strengthen state, labor and plan discipline have produced their initial results. The economic growth rate has accelerated and the fulfillment of plan targets has improved. The development of the leading branch of the

Soviet economy--industry--has speeded up. Industrial output in 1983 rose by 4 percent compared with 3.2 percent called for in the plan, which was significantly higher than the increase (2.8 percent) in 1982. There was also growth in agricultural production. For the first time of late, there has been appreciable progress in such an important agricultural branch as animal husbandry. Purchases of milk, meat and eggs have increased and the fodder base has been strengthened. There has been slight improvement in the work of rail transport which not only met but significantly surpassed targets for increasing freight shipment and freight turnover. Certain positive results were also obtained in construction and other branches of the national economy.

Qualitative indicators also improved somewhat: the growth of labor productivity accelerated; many branches of industry began moving with greater speed and confidence in the direction of accelerating scientific and technical progress; cost of production once more began to decline in industry and transport; as a result of the intensified effort to conserve fuel, energy and raw materials, the material intensiveness decreased; the ratio of the growth of labor productivity to wages improved.

The social program of the five-year plan was realized and the people's well-being was further improved on the basis of the development of social production and its increased effectiveness. As we know, in 1982 there was virtually no increase in the population's real incomes due to the nonfulfillment of trade turnover targets. Last year, the sale of goods to the population in comparable prices increased by 2.7 percent compared with 1982. The result was a 2 percent increase in real per capita income. More than 109 million m<sup>2</sup> of housing were built; the housing conditions of more than 10 million persons were improved.

At the same time, in many sectors of the national economy, there are still bottlenecks and significant shortcomings, the elimination of which will require a great deal of work.

The immediate tasks of economic, organizational and ideological work in the national economy were formulated in the December (1983) Plenum of the CPSU Central Committee and in the speech by K. U. Chernenko, general secretary of the CPSU Central Committee, at the Extraordinary Plenum on 13 February 1984. It is first of all necessary to concentrate attention on the most critical issues, on the so-called bottlenecks that must be eliminated if we are to succeed. A responsible role in this regard belongs to USSR Gosplan and to the entire system of planning organs.

Every branch, every labor collective must have a clear understanding of the ways and means to be used to attain the high indicators of the 1984 plan for the conservation of all types of resources, supplies, raw materials and energy; for increasing labor productivity; and for increasing consumer goods production. As an additional party assignment, party and trade union organizations and labor collectives have been given the task of increasing labor productivity by 1 percent in excess of the plan and of lowering the cost of production by an additional 0.5 percent.



Labor collectives in Moscow and Leningrad, in the Ukraine, Kazakhstan, Georgia and other cities have initiated this movement. Enterprises have formulated appropriate pledges and have opened special conservation accounts. Planning organs must carefully weigh the reserves and in the course of carrying out the plan jointly with other economic departments must search for additional reserves for securing the uninterrupted work of the national economy.

Such a form of popular initiative as the movement (which originated in the prewar years and the early postwar period) to increase the number of shifts in which equipment is operated and to attain the projected labor-output ratio will be a good additional contribution to the fulfillment of one-year and five-year plan targets. It subsequently began to die out for no good reason. Departments <otdely> of USSR Gosplan, together with ministries and departments <vedomstva>, will have to give serious thought to ways of recreating this movement on a new organizational and technical basis, to specific measures for mobilizing the considerable reserves that exist in branches and at enterprises for increasing the effectiveness of production and labor productivity and that have not yet been reflected in the plan for one reason or another.

The most earnest attention must be focused on such a lever for increasing the effectiveness of socialist economic management as the observance of contractual delivery commitments. In recent years, higher demands have been made on economic managers with regard to their observance of contracts and laws. But nonetheless, there are still many loopholes that are legalized by departmental instructions authorizing the payment of bonuses despite the incomplete fulfillment of delivery targets. In a number of machine building ministries, the application of a "maximum percent of underfulfillment" authorized by the instructions made it possible to pay bonuses to almost half of the enterprises despite breaches of contract. Measures will have to be taken to bring proper order to the strengthening of delivery discipline, to develop appropriate proposals for improving the work of enterprises, organs of material-technical supply and transport, and all elements of management responsible for seeing to it that the production process is rhythmic and uninterrupted. When contractual commitments are violated, each economic organ must answer for the violation economically according to the measure of its guilt.

The use of the country's existing production and scientific-technical potential with a high degree of return is the decisive direction in the mobilization of additional reserves. Planning organs, ministries and departments have not as yet found the way of fully activating the enormous capacities created in the chemical industry, petrochemical industry and in machine building in recent years. USSR Gosplan, together with branch ministries and USSR Gosstnab, is ordered to develop the necessary measures to correct intra- and interbranch discrepancies and disproportions.

The acceleration of scientific and technical progress continues to be a problem of paramount importance that we must work continuously and persistently to solve. A good impetus in this leading direction was given by new decisions adopted after the November (1982) Plenum of the party's Central Committee and by important experiment to stimulate the development and introduction of new technology. Nonetheless, the organization of the

entire complex of scientific and technical work is as yet far from perfect. The principal shortcomings are: delays in the retooling of a number of branches, the nonfulfillment of targets pertaining to new technology, and the limited scope of these plans. The state of affairs in the national economy requires that ministries, departments and the USSR Academy of Sciences decisively turn their attention to raising the technical level and quality of production. The activity of collectives of scientific research and design organizations, of engineering-technical and scientific cadres must be subordinated to this effort.

The December (1983) Plenum noted that the state of affairs in capital construction, a most important branch, cannot be deemed satisfactory. The scale of construction throughout the nation is enormous. The realization of our plans is directly linked to construction. Nevertheless, notwithstanding construction's powerful industrial base and qualified design organizations, a number of capacities and projects are not being put into operation on schedule. In construction, as in other branches of the economy, there is every prerequisite for bringing about a real improvement in the effort. The key to success lies in increasing the responsibility of the cadres, in demanding that they discharge their duties flawlessly, that they display initiative and that they carry out their assignments without fail.

The work of transport requires our unflagging attention. This branch has more reserves and unutilized potential than any other branch which can be brought into play in a short period of time. The reference is first and foremost to curtailing irrational freight shipments that are burdensome to the entire economy. USSR Gosplan departments together with the appropriate ministries and departments have the obligation to analyze this question in depth and to devise the necessary measures to bring proper order to the location, specialization and coordination of production, to eliminate much of the cross-hauling and unnecessary shipments, and to see to it that the plans contain the appropriate targets.

The protection of the environment and the rational utilization of natural resources are a task of major economic and social significance. After all, the issue here is essentially people's health and a thrifty, proprietary attitude toward the country's riches. What is more, these are also questions that concern the future of our economy and hence the living conditions of future generations will depend on the way they are resolved. Despite serious efforts in this area, this urgent problem is still on the agenda. Here as in no other sphere, the departmental approach, which not only reduces the effectiveness of the measures that are taken but also make it difficult to pursue a uniform policy, cannot be tolerated. Recently, the Politburo of the CPSU Central Committee sternly called the attention of a number of ministry heads to the lack of discipline shown by them in the performance of nature conservation measures by subordinate enterprises in Kemerovo Oblast, and demanded that they correct the given shortcomings. All economic management organs must secure an integrated, state-oriented approach to this problem and must decisively increase the effectiveness of the entire environmental management and monitoring system.

All economic efforts by the party are ultimately aimed at raising the living standard of the people as the main sociopolitical goal of our plans. All successes in the development of our social production are evaluated according to their merits when they improve the people's well-being. The plan for the fourth year of the five-year plan envisages the further intensification of the social orientation of the development of production. The entire increase in national income is oriented toward consumption: industrial branches that produce consumer goods are slated to grow at a relatively more rapid rate; capital investments and other resources for realizing the Food Program and for developing branches of the agro-industrial complex are allocated at the level of five-year plan targets for 1984; more resources are being allocated for housing and sociocultural construction. State and cooperative retail trade is scheduled to rise by 5.4 percent and to total 322.5 billion rubles; real per capita income will grow by 3.5 percent, which is faster than the growth rate of national income.

The December (1983) Plenum of the CPSU Central Committee substantiated measures to satisfy the population's need for food and manufactured goods from the standpoint of the fulfillment of these targets. Given the higher purchasing power of the population and the level of ownership of various commodities, people of late have been making significantly higher demands on the assortment and quality of products. Nonetheless, as demonstrated by wholesale trade fairs held in 1983 and by the growth of the inventory of commodity stocks in excess of the norm, industry is very remiss in turning to the production of modern consumer goods.

Still frequently encountered instances in which high-quality raw materials and supplies are used to produce goods that do not find a market and the sluggishness of trade and industry workers have been the subject of sharp criticism. The existence of serious shortcomings in planning is also attested to by the fact that as a result of the incorrect evaluation of the population's actual requirements and market conditions, individual goods are variously elevated to the rank of scarce goods or else gather dust on store counters and at enterprises. This results not only in the restructuring of production and losses but also in the dissatisfaction of people and in black marketeering and other negative phenomena.

In order to secure the more complete satisfaction of the population's needs, the Politburo of the CPSU Central Committee deems it necessary to incorporate a long-term, integrated program for the development of consumer goods and a system of services to the population encompassing the most important aspects of the life of Soviet man in the next, Twelfth Five-Year Plan for 1986-1990 and in the Basic Directions of Economic and Social Development of the USSR. The production of consumer goods should be expanded step by step, every day and their quality should be improved simultaneously, without delay, without waiting for the complete preparation of the given program.

While dealing with current tasks, we must not lose sight of strategic problems in the development of the national economy. First of all, we must significantly intensify the effort to improve the management of the economy, to increase the initiative of labor collectives further. The party's Central Committee attaches great importance to the economic



experiment conducted by a number of ministries since the beginning of this year. The experiment granted associations and enterprises broader rights and increased their responsibility for their performance. The experiment will test certain new elements of managements and the experimental findings will serve as a basis for drafting proposals for the national economy as a whole. Similar measures must also be prepared for implementation beforehand in other branches. Party, Soviet and economic organs have been given the task of entering the new five-year plan with a well-organized economic mechanism that will make it possible to realize our economy's potential more fully.

Our party's orders on improving planning--the central link in the management of the socialist economy--are of fundamental importance for improving the management of the national economy. Of late, much has been done to improve the quality of state plans. But in the economic mechanism, there are still many weak places. The passive approach has not been eliminated from planning. Certain key tasks of economic development are not infrequently adapted to the existing conditions of various regions and branches.

The improvement of planning and management presupposes the selection of the most effective directions of development of the national economy and of the main links that make it possible to move the nation's economy forward rapidly along intensive lines. Accordingly, it is deemed expedient to develop a program for the integrated improvement of the entire management mechanism that must correspond fully to the economics of developed socialism and the nature of the problems to be resolved. Only the integrated, interconnected examination of questions pertaining to the improvement of the management system can resolve the problem of securing the maximum utilization of the advantages inherent in socialist production. The program for the integrated improvement of management will be a component part of the new version of the Program of the CPSU. The program will make provision for:

--improving the organizational structure of management at all levels and in all links of the national economy;

--improving the system of national economic planning based on the demand to increase the socioeconomic effectiveness of social production;

--increasing the effectiveness of the entire aggregate of economic levers and stimuli in the economic mechanism, including pricing, the credit-financial system, methods for evaluating economic performance, etc.

These points do not exhaust the list of economic problems that need to be resolved, especially because life poses new problems. Our successes depend to a decisive degree on the mobilization of the masses, on people's creative attitude toward the assigned task and on the further development of socialist competition. The careful screening of cadres for professional and political qualities and the training of real production organizers, of able officials who are full of initiative is a most important consideration in this regard.

Elections to the Eleventh Convocation of the USSR Supreme Soviet are a major event in the Soviet state's sociopolitical life that holds great importance for the further development of socialist democracy and the subsequent activity of all Soviets of People's Deputies throughout the nation. During the preparations for the elections, the working people made many proposals and critical remarks aimed at improving the economy, raising labor productivity, lowering the cost of production and eliminating shortcomings in the organization of production. All economic and planning organs must be most attentive to these proposals and remarks and make use of everything that is businesslike and constructive.

The report-election campaign that has concluded within the party and meetings and conferences have demonstrated full support for the course of the 26th Party Congress, the November (1982) and June (1983) Plenums of the Central Committee and the orientation of all party organizations toward decidedly improving the style and methods of management. This is the guarantee of the successful realization of new tasks pertaining to the nation's future economic development, to the improvement of the people's well-being.

The successful realization of collectives' published counterplans and socialist pledges regarding additional increases in labor productivity and the lowering of production costs requires more intensive organizational work on the part of party, economic and trade union cadres and the higher degree of organization and awareness of the masses.

"It is no less important now," K. U. Chernenko, general secretary of the CPSU Central Committee, stated in his speech at the Extraordinary Plenum of the Central Committee, "to secure the ever closer interconnection of the economic, social and spiritual progress of Soviet society. It is impossible to raise the economy to a qualitatively new level without creating the necessary social and ideological prerequisites. It is equally impossible to resolve urgent problems of development of socialist consciousness without the firm foundation of economic and social policy."

The Soviet people, closely united around their beloved Leninist party, are making their worthy contribution to strengthening the economic and defensive might of our socialist Motherland, to the cause of communist construction.

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CSO: 1820/114

## ECONOMIC POLICY, ORGANIZATION AND MANAGEMENT

### ACADEMY OFFICIAL DISCUSSES MANAGEMENT IMPROVEMENT

Moscow PLANOVYE KHOZYAYSTVO in Russian No 4, Apr 84 pp 59-66

[Article by Doctor of Economic Sciences Professor V. Ivanchenko, deputy director of the Institute of Economics of the USSR Academy of Sciences: "The Economic Mechanism in the System of Management"]

[Text] The solution of the problems of the intensification and the increase of the efficiency of production, which were posed by the June and December (1983) CPSU Central Committee Plenums, is giving rise to the need for "the elaboration of a program of the comprehensive improvement of the entire mechanism of management, which should completely conform to the economics of socialism and the nature of the tasks being accomplished."<sup>1</sup>

Such an approach is connected with the real conditions of the present stage of the improvement of mature socialism, the intensification of the process of the socialization of production and the social division of labor, the development of the specialization of production and cooperation and the formation of a unified national economic complex and a system of production, agro-industrial and other complexes. The changes in the system of planned management in any structural unit of the national economy affect all the components of the economic mechanism. There is explained by precisely this the fact that frequently the results of progressive changes, which are of a limited nature, decrease due to the shortcomings which are inherent in the entire system of relations in the management of production. For example, in the process of the evaluation of the activity of enterprises of industry according to the sale of products with allowance made for the making of deliveries on the basis of concluded economic contracts at the first stage the system of management did not encompass all products and the system of cooperative ties not only in industry, but also in other sectors, including transport and material and technical supply. As a result the decrease of the legal and economic liability of enterprises occurred. The shortcomings on the making of deliveries were explained by factors which do not depend on the activity of the collective (component parts did not arrive, cars for the shipment of finished items were delivered late and so on).

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1. "Materialy Plenuma Tsentral'nogo Komiteta KPSS, 26-27 dekabrya 1983 goda" [Materials of the CPSU Central Committee Plenum, 26-27 December 1983], Moscow, Politizdat, 1983, pp 21-22.

The assurance of the planned making of deliveries on the basis of contracts requires considerable efforts, and first of all of an organizational and management nature. The former practice of coordinating the plans directly during their fulfillment and the shortcomings in material and technical supply and the operation of transport hindered the fulfillment of contracts on the deliveries of products. This was noted at the December (1983) CPSU Central Committee Plenum: "There are still 'loopholes,' which make it possible to pay bonuses in cases of the incomplete fulfillment of the assignments on deliveries. Even a special term: 'the maximum percent of underfulfillment,' has been legitimized by planning organs."<sup>2</sup>

The improvement (even gradual) of only individual components, aspects and units of the integral system of management complicates subsequently the process of their coordination in the achievement of a common orientation of new statutes, the assurance of the unity of interests and the elimination of contradictions in standard legal documents. The functioning at the same time of several new and previously operating elements of the economic system has the result that the system of management does not master all the details of innovations.

That is why it is important to select what has justified itself in the prevailing economic mechanism and all the new components of management, which will undergo checking during the economic experiment in a number of ministries on the broadening of the rights of enterprises and the increase of their responsibility for the results of work, in order to have during the 12th Five-Year Plan a well-adjusted economic mechanism which makes it possible to use more completely the possibilities of our economy. In this connection the role of the comprehensive approach to the settlement of the questions of the improvement of the system of management is increasing.

A comprehensive, integrally coordinated system of planning, administration and the methods of management, which is an integrity which meets to a greater extent the needs of the dynamic development of productive forces and production relations, is understood by the system of planned management. The public ownership of the means of production (the relations of ownership), the law of development according to plan and the basic law of socialist production in interaction with the entire system of objective economic laws act here as the system-forming principles.

The comprehensive improvement of the planned management of the economy of mature socialism involves enormous organizing work, which is aimed at the implementation of the decisions, which have been adopted by directive organs, in the area of planning, the broadening of the independence and responsibility of enterprises, the acceleration of scientific and technical progress and the intensification of the economy. It is a question not only of the gradual introduction of the forms and methods of management, which have justified themselves, but also of the implementation of additional measures, which are envisaged by the decrees of the CPSU Central Committee and the USSR Council of Ministers "On Additional Measures on the Broadening of the Rights of Production Associations (Enterprises) of Industry in Planning and Economic Operations and on the

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2. "Materialy Plenuma Tsentral'nogo Komiteta KPSS, 26-27 dekabrya 1983 goda," pp 12-13.



Increase of Their Responsibility for the Results of Work," "On Measures on the Acceleration of Scientific and Technical Progress in the National Economy" and "On the Improvement of the Economic Interrelations of Agriculture With Other Sectors of the National Economy." Decisions on the improvement of the management of rail and motor transport and others have been adopted. These directive decisions combine the scientific, technical, economic, social, organizational, legal, personnel and other aspects of the improvement of the management of the economy.

The measures being implemented on the improvement of management are directly connected with the decree of the CPSU Central Committee, the USSR Council of Ministers and the All-Union Central Council of Trade Unions "On the Intensification of the Work on the Tightening Up of Socialist Labor Discipline," which is aimed at the increase of conscious labor discipline, the increase of organization in all spheres of activity of the Soviet people and the acceleration of the increase of labor productivity. A set of measures, which is called upon to create the appropriate material, technical and personnel base, moral and psychological climate, legal norms and an effective system of stimuli and penalties, is specified in the decree.

The conducting of major economic experiments, which envisage the checking in practice of the most important new components of the economic mechanism for their subsequent systematic inclusion in the prevailing system of management, is becoming an important organizational stage of the improvement of the mechanism of management. Apparently, the corresponding standard statute on major economic experiments and the procedure of their conducting should be elaborated in the future. It is a matter, in essence, of the determination of the directions of the improvement of production relations under the conditions of mature socialism, the forms of the mastering of the factors of intensive growth, the substantial increase of production efficiency in the primary unit--the production association (enterprise)--and the broadening of their independence, which should be combined with the increase of responsibility and concern about the national interests. This condition is the basis for the directive decisions on the conducting of the economic experiment in industry and is set down in the standard procedural documents, which have been prepared by central planning organs and ministries.

The experiment in five ministries encompasses a large group of problems, which are connected with the strengthening of the economic mechanism, the planning and evaluation of the activity of enterprises, the acceleration of development and the introduction of new equipment and technology, the increase of the interest of labor collectives in the increase of production efficiency and the strengthening of the bases of cost accounting.

Among the most important new components of the economic mechanism one should note: the use of a system of incremental standards of the formation of the wage fund and the economic stimulation funds, which ensures their stability for a number of years; the establishment within state capital investments of the assets of the development fund as noncentralized investments with the substantial broadening of the rights of associations (enterprises) in the planning and use of the assets of this fund for the retooling of production; the more consistent implementation of the law of distribution according to labor and

others. The success of the experiment in many ways depends not only on the activity of the enterprise itself, but also on the possibility of completely realizing the rights granted to it. The system of economic ties and material and technical supply requires improvement, individual problems of pricing require solution. Already now it is also possible to name other problems which require careful analysis. Owing to the fact that the experiment is being conducted beginning with the fourth year of the five-year plan, it is important to find means of strengthening its connection with the five-year plan. In our opinion, it is necessary to approve stable economic standards not for 1984-1985, but up to 1990, which will enable enterprises to seek more boldly and use internal production reserves. This also applies to the indicators and limits which are being approved. Thus, in the annual plans the reapproval of the limit of state capital investments and the times of the placement of fixed capital and production capacities into operation is envisaged, which will affect the stability of the plans which are connected with the production development fund. Such an approach decreases the role of the five-year plans in the technical improvement of production, since their planning and stimulation for the most part are connected with the indicators of the annual plans. The same thing also applies to the standard of the deductions from the accounting profit for the state budget, the stability of which is confined to the annual plan, since it is not included in the five-year plan. This does not make it possible to use the stimulating function of this indicator under the conditions of the standardized distribution of the profit and so on.

The implementation of the basic provisions of the experiment presumes the elaboration of sound suggestions in order to include them in the future in the unified economic mechanism for industry and to develop the concept of the comprehensive improvement of the system of management.

At present the quickest regulation and systematic improvement of the organizational structures of management, the perfection of which still lags behind the development of productive forces and production relations, are one of the most important tasks of the formation of a comprehensive system of management. This is checking the processes of the specialization and centralization of production and is giving rise to contradictions which are leading to undesirable clashes.

The gained experience of improving the organizational structures, drafting master plans of the management of sectors and setting up industrial, production and scientific production associations makes it possible to give a specific evaluation of the actual state of affairs and to draw conclusions for the further performance of this work. The improvement of the organizational structures of management is being carried out on the basis of the decisions of 1974, more than 4,000 production associations and about 250 scientific production associations have been formed in industry. Master plans of management have been formulated in nearly all the sectors of industry. However, they were not completely implemented and, moreover, did not reflect the dynamic development of production, its specialization and cooperation and other factors.

The formation of production associations without the formulation of plans and technical and economic substantiations and the examination of intersectorial versions in case of the choice of the optimum decisions gave rise to a large number of formal structures in the primary unit. More than 50 percent of the

associations contain two or three enterprises, which for the most part retain economic independence. Therefore the substantial improvement of the organization of management and the increase of production efficiency were not achieved.

At the same time this modern form of organization has its advantages.

At present in case of the analysis and generalization of the experience of production associations purely quantitative comparisons of the most important indicators of the work of the associations and of enterprises, which are not a part of them, are usually used. In case of such evaluations a number of methodological errors, in our opinion, are committed. Thus, in the process of setting up associations the period of the formation of a technologically and economically unified, fundamentally integral structure is not taken into account. Even the production complexes built according to uniform planning and technical specifications (the Volga Motor Vehicle Plant, the Kama Motor Vehicle Plant) go through cycles of formation. In a number of sectors this process was dragged out. For many newly formed production associations the plans of their development so far have not been formulated. Frequently economically weak and inadequately equipped production units, which, as a rule, are average in technical and economic characteristics, are a part of the association. They worsen the indicators of the work of the association as compared with the enterprises which did not form a part of it.

However, even under such conditions in a number of sectors (the automotive industry, agricultural machine building) the indicators of labor productivity, the output-capital ratio and the profitability are significantly higher, while the production costs and the expenditures on the pay of management personnel are less than those of enterprises which were not included in associations. Thus, in the Ministry of Tractor and Agricultural Machine Building the production associations account for more than 60 percent of the total production volume. Here the indicators of labor productivity and the output-capital ratio are 17-23 percent higher than those of independent enterprises, the indicator of the profitability is nearly 1.3-fold higher. The indicators of work are also better at individually taken associations, such as VAZ, KamAZ, LOMO and others. The proportion of products with the Seal of Quality at them is threefold greater than on the average for the sector.

In case of the setting up of associations the most important principle--the interdepartmental approach when determining their optimum structure--was not realized.

The formation of associations according to the departmental principle did not make it possible to realize completely the territorial criterion of optimization. The enterprises, which are a part of an association, at times are separated territorially and are deprived of the possibility of the day-to-day management of production. At the same time small similar associations of different departments operate on the same territory in a city. This is especially characteristic of the construction materials industry, the timber and wood processing industry, service works and capital construction.

Further, when drawing up the standard procedural and legal documents, which are connected with the setting up and operation of associations, the specific

nature of sectorial and regional management and the role of local authorities in the monitoring of their activity, the structural subdivisions of which are located in different republics, oblasts, cities and rayons, were not taken into account. Local organs, as practical experience has shown, are interested in maintaining the economic independence of the production units which are a part of the association.

Finally, the psychological aspect of this problem is no less important. The director of the plant, factory and organization, its managers and the collective under the conditions of associations are called workers of the production unit, and such a definition does not characterize the essence of their operational activity. It is impossible also not to take into account the fact that in the organization of the process of management the division of this unit into parts in the production association did not lead in a number of cases to the decrease of the number of levels. Whereas previously the enterprise went directly to the ministry, now the final settlement of difficult questions of the production unit frequently passes through a chain: the production association--the industrial association--the ministry--local organs. The situation is different at the VAZ and KamAZ Associations. There are no production units here, but there are works, plants and affiliates. It seems that the experience of forming associations like VAZ should become the basis for the radical rearrangement of the entire system of production associations and the organization of production management. It is not a matter of developing such large-scale structures. Associations with allowance made for the specific nature of the sectors and works can be different in size and the volume of production. But they should become fundamentally (with respect to technology, specialization and combination) unified complexes. Highly specialized factories, plants, agro-industrial complexes and territorial production complexes should take the place of the production units. Large modern production and scientific production associations can combine the functions and rights of industrial associations, which will make it possible to form systematically an efficient two-level system of management.

When improving the organizational structure in the primary unit, it is necessary to take into account the objective trends of the rearrangement of management under the conditions of the increasing influence of the scientific and technical revolution. It is a matter of the setting up along with large production complexes of relatively small highly specialized enterprises of intersectorial mass and large-scale production, which it is not always advisable to include in an association. Here the contract between such enterprises and associations should encompass not only questions of deliveries of products, but also the prospects of the scientific and technical policy of production, the problems of economic stimulation and others. Such an approach will make it possible to speed up the process of the specialization and concentration of production of small enterprises on the basis of the development of intersectorial production structures.

With allowance made for the gained experience it is possible to formulate the basic principles of the further improvement of the organizational structures of management. The improvement of the organizational structures of management must be regarded as a process which stems from the development of productive forces and production relations and from the specific tasks and conditions of



the planning periods. In this connection it is important to elaborate (refine) the master plans of management by 5-year periods, having made them a permanent structural component of the system of plans along with the master plans of the location of productive forces, the development of large cities and others.

The organizational structures of management are called upon to encompass all the units of the unified national economic complex and the hierarchy of management. Here the primary unit (the association, enterprise, organization) is a dynamically developing structure in the system of management. Here the processes of renovation, the technical improvement of production and updating take place, the forms of cooperation are developed and the advanced know-how of the organization of labor is introduced. Thus, the brigade form of the organization of labor requires the substantial change of the entire system of management at the enterprise. In large associations the fundamentally new forms of the functional management of large production complexes take the place of the shop structure. In this connection the overall process of the improvement of the organizational structures should be carried out from the bottom up, since the redistribution of the function of industrial associations, ministries and state committees and accordingly the revision of the statutes on these organs of management depend on the change of the functions of the primary unit. The broadening of the economic functions and rights of production associations requires the improvement of the structure and the optimization of the sizes of production associations, since for small enterprises the full realization of such functions and rights is an impracticable task. That is why consistent systematic work on the improvement of the composition and structure of operating production associations and production associations which are being newly set up and on the increase of the role in the economy of complexes of the optimum sizes, which have a considerable scientific, technical and economic potential and have the real possibility to fulfill an enlarged group of functions and to accomplish full cost accounting (including reproduction), is necessary. It is important to achieve a real increase of the level of the concentration, specialization and cooperation of production, on the basis of intersectorial and national economic criteria of efficiency. In case of the formation of an association it is necessary to formulate plans, estimates of the expenditures and technical and economic substantiations under the same conditions as for the construction of new enterprises. However, this task is difficult, since in case of the choice of the version with the minimum adjusted expenditures the intersectorial factors of efficiency, particularly the results of the specialization and concentration of production and the centralization of management, should be taken into account.

The radical improvement of the organization of the middle level in management, the strengthening of its production and economic functions, which are of great importance for the subsector, the specification of the group of enterprises and organizations, which form a part of it, the transformation of industrial associations into production associations with the rights of the primary and middle level and the consolidation of all-union industrial associations and republic industrial associations will become possible on such a basis.

The accomplishment of the stated directions of the improvement of management at the primary and middle levels will make it possible to revise the structure of ministries with the transfer of a portion of the management, planning and

production economic functions to the jurisdiction of associations on the basis of the increase of their economic independence and responsibility. Here the gradual development of the planning and organizational methods functions of ministries and the specification in legislation of their specific duties are meant. In particular, it is necessary to grant them the right to make technical and economic decisions, which have mandatory force for the corresponding units.

The broadening of the rights and opportunities of regional organs of management, first of all the soviets of people's deputies, in the area of the comprehensive development of the corresponding territories, the meeting of the needs of the population, the creation of the production and social infrastructure, environmental protection and the efficient use of nature, as well as the optimum combination of sectorial and territorial management can have a substantial influence on the change of the functions of the sectorial ministries.

For the improvement of the management of the "science--production" cycle it is necessary, in our opinion, to strengthen the role of the main intersectorial scientific research and planning institutes in the overcoming of departmental limitedness and the sectorial approach in the development of science and economic practice and the strengthening of the national economic criteria of their work.

Finally, economic practice confirms the advisability of the setting up at the national economic and regional levels of permanent and temporary intersectorial centers of management on the basis of the formulation and systematic improvement during each 5-year period of the master plans of the management of sectors and regional complexes.

In our opinion, already during the current five-year plan the systematic formulation and implementation of master plans of the management of all the sectors of the national economy and plans of the setting up and renovation of associations should be organized, while intending to prepare the base for the transition subsequently to 5-year cycles of the systematic improvement of the organizational structures of management. A unified state center of management, which has its own structure subdivisions in the central planning organs, the ministries and departments of the USSR and the councils of ministries of the union republics, as well as in the local system of management of the economy, can ensure the organization of this important work. Such an organization will make it possible to coordinate integrally planning, administration and the methods of management in conformity with national economic requirements and will promote the elimination of small inefficient subdivisions, by increasing systematically the level of the concentration and specialization of production in associations.

The formulation of plans of the development of associations as the initial materials for the preparation or revision of the master plans of the management of the corresponding sectors, the efficient redistribution of functions in the structure of management and the formation of the internal economic organization of production associations is also necessary.

Here it is important to use the diversity and the versatile forms of the organization of associations, which take into account the specific production and economic features of the corresponding sectors, the regional conditions of the operation of enterprises and so on. In particular, it is important to set up large associations with their direct subordination to the corresponding ministries, as well as the subdivision as needed of production associations. In this connection the experience of the GDR and Bulgaria (in the area of the formation of a system of combines with the rights of both the primary and middle level) merits attention. The experimental checking of the organization and activity of associations, which centralize individual production and economic functions, and the formation of an association of enterprises on a proportionate (shared) basis can yield definite practical results.

The skillful combination of the formation of new production associations and the development of operating production associations with the improvement of the organization and conditions of the activity of small enterprises and their orientation toward the intensification of the specialization of production in industry, including at large enterprises, by freeing them from the production of items of an extensive products list and small series and of single items and from the need to maintain for this an excessive pool of equipment of a different nature are required.

The extensive experimental checking of such organizational forms, which have been advanced by practice and are suggested by science, as national economic centers, which carry out the supervision of the development of production of a group of similar or interconnected sectors within a specific region; main ministries, which are responsible for the implementation of comprehensive goal programs (construction, scientific and technical, economic and others) on a specific territory; regional goal program organs of union or republic, including interdepartmental, subordination; planning commissions by large regions which encompass a number of union republics; the broadening of the functions and rights of local (oblast, kray) soviets of people's deputies in the coordination of the activity of enterprises of union and republic subordination, seems important for the purposes of the improvement of sectorial and territorial management and the perfection of the management of territorial production complexes.

Economic interrelations of the sectorial and regional units, which ensure the efficient dependence between the formation and use of the resources available in the region, are also necessary. In the regions it is possible to establish a cost accounting dependence between the number of workers and the expenditures being made on expanded reproduction. Such a dependence is possible, in our opinion, as a result of the setting up under the jurisdiction of the soviets of people's deputies of regional intersectorial centralized funds for the financing of the development of the social and nonproduction spheres and the implementation of ecological measures.

Here the dependence of the expenditure and revenue portions of local budgets can be established with allowance made for the level and the tasks of the development of the productive forces of the region, the growth of the population and the efficiency of the functioning of enterprises of union, republic and

local subordination. On this basis it is advisable to introduce deductions of associations and enterprises for the local budgets for the use of resources. Such experience exists in a number of countries of the socialist community, and particularly in Romania.

The problems of the improvement of the organizational structures in construction, power engineering and transport with allowance made for the more complete integration of the activity of all its types require a special examination.

In capital construction the improvement of the organizational structures of management from the standpoint of the optimization of the sectorial and territorial aspects of management is acquiring great importance. Today it has become obvious that the sectorial dispersal of the construction and installation potential in regions (in union republics, large cities and so on) decreases the possibilities of the acceleration of the entire cycle of construction and installation work, the placement into operation and the assimilation of capacities and facilities. With allowance made for this, work is being performed on the formation of an intersectorial system of the management of construction work (regardless of the subordination of the primary units) on the basis of the formation of main territorial organs of the management of construction in the form of main territorial administrations, and in individual cases also the establishment of republic construction ministries, which unite all construction organizations and are capable of performing all the functions of a contractor for all the clients of the region. Individual administrations in narrowly specialized union ministries like the Ministry of Construction of Petroleum and Gas Industry Enterprises will constitute exceptions. Such regional formations of construction work as a unified structural subdivision make it possible also to include in the complex all the enterprises of the construction materials industry regardless of their departmental subordination. At present definite experience has been gained in the setting up of unified territorial systems of the management of all types of transportation traffic at the Leningrad Transportation Center. Apparently, the need has arisen to include the formation of unified transportation centers in the system of the management of traffic, which integrates all types of transport.

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## PLANNING AND PLAN IMPLEMENTATION

### GOSPLAN COLLEGIUM SETS 1984 TARGETS

Moscow PLANOVYE KHOZYAYSTVO in Russian No 3, Mar 84 pp 127-128

[Article: "In USSR Gosplan"]

[Text] The USSR Gosplan Collegium reviewed the results of the December (1983) Plenum of the CPSU Central Committee and designated measures for the accomplishment of its decrees as well of the decisions of the ninth session of the 10th USSR Supreme Soviet on the State Economic and Social Development Plan of the USSR and the USSR State Budget for 1984.

The collegium bound the members of the collegium, department chiefs, and all USSR Gosplan personnel to concentrate their primary attention on the following questions while being guided by the decisions of the December (1983) Plenum of the CPSU Central Committee and the ninth session of the USSR Supreme Soviet:

the better utilization of production and scientific-technical potential, the extensive introduction of the achievements of science, technology, and advanced experience into practice, the improvement of the organization of construction projects, the concentration of efforts and resources on projects under construction, improvement of the utilization of existing and the most rapid commissioning of fixed capital and production capacities, the comprehensive improvement of the productivity of labor and reduction of the prime cost of production;

strengthening of a system of economizing in economic sectors, providing for the unconditional accomplishment of the tasks for reducing the expenditure norms of material, fuel-energy, and raw material resources as the most important condition for accomplishing state plans, and searching for additional material, labor, and financial resources for their inclusion in the production process;

providing for the accomplishment of tasks connected with social development and improving the standard of living of the people.

The collegium instructed the members of the collegium and USSR Gosplan department chiefs:

to provide for systematic control over the progress of the accomplishment of the tasks of the 1984 plan in the appropriate sectors by placing specialists on location and to provide for the preparation of measures which will ensure the fulfillment and overfulfillment of a plan;

to concentrate efforts on the preparation of proposals for accelerating scientific-technical progress, to improve the results and output of the operations of enterprises, scientific-research and design organizations, engineering-technical and scientific personnel, while considering that the problems of improving the technical level of production and the quality of products are a task of paramount importance. Moreover, the combined department of science and technology was instructed to prepare regular, detailed reports on the progress of the accomplishment of the decisions adopted by the party and the government and USSR Gosplan on accelerating scientific-technical progress in the economy with specific proposals for eliminating the deficiencies that arise;

to organize operations with the ministries, departments of the USSR, and the union republic Councils of Ministers for examining the present situation with respect to the utilization of production capacities and to prepare proposals aimed at increasing their work load, the immediate elimination of "bottlenecks," intersectorial disconnections and intersectorial integration failures and disproportions for the purpose of improving the effectiveness of the utilization of existing production potential.

It is suggested in the preparation of these proposals that particular attention be given, in particular, to increasing the use of casing-head petroleum gas, increasing the intensity of oil refining, the further transfer of thermal electric power stations from fuel oil to fuel gas, the elimination of disparities between the designed and operational capacity of power equipment in electric power stations, the elimination of disproportions between blast furnace, mining, and by-product coke production operations in ferrous metallurgy, the output of individual kinds of products in the chemical and petrochemical industry and in the spinning, weaving, knitted-goods, and finishing shops of light industry, providing for the production of necessary equipment and machinery for the basic sectors of the economy, particularly ferrous metallurgy; increasing the production capacities of the food industry for the purpose of radically increasing the use of incidental products derived from basic raw materials--skimmed milk, buttermilk, whey--for foodstuffs.

The combined department of production capacity balances and the department of combined five-year and annual planning were instructed to examine the above proposals and take them into consideration in working out the draft plans for 1985 and the 12th Five-Year Plan.

Corresponding departments of USSR Gosplan were also entrusted with the preparation of proposals:

on improving the effectiveness of the utilization of the potential generated by agriculture, and also of the capital investments, technology, and mineral fertilizers allocated to this sector;

on increasing the shift operation of equipment in economic sectors and organizing a systematic accounting of the shift operation of equipment together with TsSU SSSR [USSR Central Statistical Administration];

on the further reduction of cross and other inefficient hauls for the better utilization of existing transport reserves and resources;

on questions concerning the location, specialization, and collaboration of production plants, arising from the necessity to eliminate economically unjustified freight hauls;

on measures providing for the improvement of planning organization in sectors of the machine building industry;

on a system of organizing and accounting for the additional plan tasks jointly with TsSU SSSR, AUCCTU, USSR Ministry of Finance, Goskomtrud SSSR [USSR State Committee for Labor and Social Problems], and USSR Gosbank accepted by associations and enterprises with respect to an increase in the productivity of labor by 1 percent and a reduction of the prime cost of production by 0.5 percent;

on improving the system of evaluating plan fulfillment taking into account deliveries jointly with USSR Gosstnab and the USSR Central Statistical Administration with respect to contracts and orders;

on the organization of work to achieve the planned labor-intensiveness of production in enterprises.

The departments of USSR Gosplan were instructed to place under strict control:

the progress of construction on health service, educational, and cultural facilities and the commissioning of housing units, preschools, schools, hospitals, vocational and technical schools, and to submit quarterly reports on their progress to the management of USSR Gosplan. In the event of necessity, to work out measures for guaranteeing the unconditional accomplishment of tasks regarding the construction of the above-mentioned projects;

the accomplishment of the tasks of the state plan with respect to environmental protection and the rational utilization of natural resources by the appropriate ministries and departments of the USSR which are responsible for those enterprises which are primary sources of environmental pollution while giving special attention to the use of capital investments and the start-up of environmental protection projects.

For the purpose of accomplishing the goal established by the December (1983) Plenum of the CPSU Central Committee on improving economic planning and management, the USSR Gosplan Collegium adopted the decision to prepare proposals for organizing the development of a program for the overall improvement of the whole management mechanism including the improvement of its organizational

structure, the improvement of the planning system, and increased effectiveness of economic levers and incentives.

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CSO: 1820/116



## INVESTMENT, PRICES, BUDGET AND FINANCE

### EXPERTS DISCUSS CURRENT FINANCING RELATIONSHIPS

Moscow PLANOVYE KHOZYAYSTVO in Russian No 3, Mar 84 pp 61-69

[Article by Professor D. Allakhverdyan, doctor of economic sciences; sector chief, Institute of Economics, USSR Academy of Sciences; and P. Podshivalenko, deputy chairman, Stroybank [All-Union Bank for Financing Capital Investments]: "The Development of Financial and Credit Relations"]

The financial and credit mechanism is an important component of the economic mechanism. It includes the basic principles, forms and methods of planning, managing and organizing financial and credit relations, and the accumulation, distribution and effective utilization of available resources.

In economic literature, there are various points of view on the understanding of the role and functions of finances under socialism. Some economists believe that finances are a category of production rather than distribution and that they consequently perform a production function. It seems to us that finances serve the process of expanded reproduction but that they are not a production category. All forms of value (money, price, finances, etc.) lack specific material and physical content. Thus with the aid of finances as a distribution category, the initial production structure of the social product and national income can be transformed into a finite structure based on the formation of the amortization, accumulation and consumption fund. Financial and credit relations function as a structural element in the integrated economic mechanism.

V. I. Lenin noted that, distribution is a method, an instrument, a means of increasing production.<sup>1</sup> Distribution relations are not an element of production and do not create material values. They provide optimal conditions for all phases of the reproductive process. Finances participate in the reproductive process through the distribution and redistribution of national income and through the allocation of the necessary resources to the productive and nonproductive spheres. The more the essence and functions of finances are revealed as a distributive category, the more effective is their role in the reproductive process, in the planned management of the socialist economy.

In practice, the optimization of distribution relationships is displayed by providing for plan conformity and the balance of economic processes; on the other hand, instances of disproportions and non-rhythmicalness are connected with shortcomings not only in production but also in the distribution system.

Plan balance presupposes an organic connection between mathematical-physical and financial (value) proportions. In practice, the economic-mathematical models drawn up on the basis of interbranch balance of production and distribution of the social product express economic processes in their natural physical form and do not encompass financial relationships. Given the use of commodity-monetary relations and various value forms, all financial plans must be substantiated from the standpoint of the movement of financial resources with regard to both incomes and expenditures. The development of these plans requires additional economic calculations and indicators that actively influence the production plan and reflect the financial relations of enterprises, associations and branches of the national economy with the state.

Our state's financial potential is expanding under the influence of intensive factors of economic development. This is the result of the higher effectiveness of production on the basis of the relatively more rapid growth rates of national income compared with capital investments and the corresponding additional economic effect of every ruble invested in productive capital.

The priority given to reconstruction and technical retooling by our investment policy has required appropriate changes in the structure and sources of financing. This simultaneously creates the basic economic and social prerequisites for the strengthening and development of the USSR's financial potential. Such a pattern raises the role of finances in the national economy. There is also an increase in profit and profitability and their significance in the formation of the financial resources of associations (enterprises) and the state budget in general.

Socialist society must have dynamically developing centralized financial resources based on the intensification of social production and its increased effectiveness. They are required for the resolution of large-scale socioeconomic problems in the area of scientific and technical progress, for the formation and development of industrial territorial production complexes and on this basis the broad introduction of interbranch production relations, the development of a modern infrastructure, the development and production of new materials with preassigned qualities, the development of new, extremely deep, difficult to extract raw materials; for the resolution of energy and ecology problems, etc.

The USSR State Budget constitutes the core of the country's financial policy and is the economic lever for promoting the optimal functioning of the financial system as a whole. The state uses the budget to secure planned, nonequivalent redistribution for the formation of centralized net income and the application of various forms and methods of accumulating the specific distribution and active use of a significant share of net income to stimulate the greater effectiveness of the entire reproductive process. By means of appropriate financial payments, the state also centralizes the regulation of the profitability of cost accounting enterprises (associations), secures the planned use of monetary resources in the process of expanded reproduction and the balance of material and financial resources. A most important feature of the socialist state's financial

relations with cost accounting associations (enterprises) is that they account for the bulk of budget revenues. Even though financial relations acquire value form, they are not regulated by the law of value and correspondingly by equivalent commodity exchange.

The value of the surplus product, which is realized in the form of profit and turnover tax, is the source of the USSR State Budget. The formation of budget revenues with the aid of payments from profits (distribution of profits) is designed not only to establish the state's centralized fund of financial resources but also to stimulate the increased effectiveness of production on a cost accounting basis. Profit is one of the main sources of socialist accumulation. Budget revenues from state enterprises and organizations in 1984 will total 157.5 billion rubles. Approximately 40 percent of this sum will be left at the disposal of enterprises for the further strengthening of their production base and for their economic stimulation.

In accordance with a decree of the CPSU Central Committee and the USSR Council of Ministers, a number of ministries are conducting an economic experiment that gives production associations (enterprises) broader rights in planning and economic activity and that increases their responsibility for the results of their work. The task is to improve planning work in associations (at enterprises) and thereby increase labor productivity, develop initiative, accelerate scientific and technical progress, and intensify production.

It is deemed expedient to amplify the efficacy of the normative method of distributing profit so that a larger share of the profits would be left at the disposal of production associations (enterprises) attaining high end results in their work. This provides the cost accounting management system with a solid financial foundation for using the most effective economic stimulation methods, for increasing the effectiveness of social production based on its intensification.

The transition to the normative method of profit distribution requires the creation of the necessary economic prerequisites: the development of stable quotas in the five-year plan (with distribution broken down by year) and profits, together with the corresponding norms governing its distribution into centralized (payments to the budget) and decentralized (cost accounting) funds. In such a case, the enterprise profitability level should be 12-15 percent. The practice of some ministries, of the USSR Ministry of Power Machine Building in particular, shows that the normative method cannot produce the necessary effect without the given prerequisites.

Associations and the branch must have a stable five-year financial plan for the distribution of profit among the state budget, the branch and production associations on the basis of stable norms. An important feature of the normative method of profit distribution is that in addition to the normative profit that is left at the disposal of ministries and associations, the guaranteed absolute sum of payments to the budget is planned.

Turnover tax, like payments from profits, is the basic form in which net income is realized and the state budget takes shape. The conversion of production associations to a system of decentralized payments to the state the state budget will simplify its calculation, will expand the potential and increase the effectiveness of financial control over the activity of cost accounting enterprises. This will be promoted by the development of direct, long-term contractual relations between industry and trade together with the use of the appropriate incentives and sanctions for the violation of contract discipline. The significant of turnover tax will grow in the future as a result of the increase in the volume of the production and sale of consumer goods and as a result of the improvement in their quality. This will mean higher turnover tax (1) as a result of Group 'B' goods, including those produced in Group 'A' branches and (2) due to higher labor productivity based on the acceleration of scientific and technical progress, the lowering of production cost and the growth of enterprise profitability.

The introduction of a new indicator--consumer goods output per ruble of wages--is very important for accelerating monetary circulation and for increasing financial sources. This indicator will permit the broader use of the existing potential for satisfying growing consumer demand for the necessary goods and will help to balance the population's effective demand with available goods in the marketplace. Systems of incentives and fringe benefits with regard to credit, including turnover tax for producers, will promote increases in the production of goods for the people.

Amortization withholdings occupy a special place in the formation of the state's financial resources. Their purpose is to finance the physical replacement of productive fixed capital and partly to serve as an additional source for the production accumulation and expansion fund. In the process of their formation, amortization withholdings function as an element of the monetary reserve fund, temporarily supplement the loan fund and are used as an additional source of short-term credit.

The volume of the amortization fund is growing steadily, particularly in the face of scientific and technical progress. Thus, it rose from 29.1 billion rubles in 1970 to 84.1 billion rubles in 1982. According to the totals for 1982, the amortization fund was 84.142 million rubles, including 33.803 million rubles for capital repair. This ratio must change in the direction of a dramatic reduction in relatively unproductive capital repair and the use of the funds that are thereby released for the technical reconstruction of existing production.

Additional capital investments can now be taken from the amortization fund for technical retooling if they will be more effective. Such a direction is promising and is associated with the accelerated introduction and use of new equipment and will promote the speedier renovation of productive fixed capital. The right of production associations to dispose independently of part of the integrated fund for the development of science and technology for design work in the development of new equipment and to compensate the higher costs of its running-in period also serves the goals of cost accounting stimulation.



In their broad interpretation, financial relations also encompass credit relations, that acquire a relatively independent role with respect to sources and the mode of their distribution and use.

The intensification of production, the development of cost accounting principles, the broadening of the rights of industrial production associations (enterprises) in planning and economic activity and their increased responsibility for the end results of the work raise the role of credit in the national economy significantly.

The use of credit resources is a necessary condition to stimulating the increased effectiveness of production and to the development of the initiative of every cost accounting enterprise. Credit resources, unlike budget resources, meet temporary financial requirements of cost accounting enterprises and branches of the economy, which gives them the mobility to supply the national economy with additional monetary resources. Thus credit helps to resolve a contradiction that is expressed in the time lag between the need of the cost accounting production link for financial resources and the availability of these resources. Credit is an active and necessary structural link in observing proportionality in the states monetary resources.

In practice, we not infrequently find that scientifically substantiated credit principles are violated for the sake of regional interests to the detriment of national interests. The strengthening of financial discipline in the national economy must be directed toward the development of cost accounting principles. This means that enterprises must repay credit received from the state according to the schedule specified by the bank. Credit must be granted for needs specifically defined in the credit plan and goods and commodities must be available to satisfy these needs. Credit must not be used to make up for financial shortages for which the enterprise is to blame. Payments for bank loans in the form of interest are important for the reinforcement of credit discipline. This has a direct bearing on stimulating the effective use of loans and on the acceleration of their turnover.

The use of credit does not mean that it should be used to meet any expenditure of cost accounting production associations (enterprises). Under all conditions under which credit is granted, it is essential to observe its basic principles strictly and consistently, to neutralize negative trends associated with the use of short-term credit to defray production associations' current costs. The use of short-term credit to form the financial resources of production associations does not always bolster their economic situation. Enterprises and associations do not systematically concern themselves with their current financial position because they can use bank loans to make virtually all their payments. Credit is frequently divorced from the cost accounting principles governing the financing of the current requirements of the production link. Short-term credit must supplement enterprises' own working capital if the need is occasioned by the necessity of increasing the effectiveness of production and of realizing additional profit on this basis.

Some economists consider it possible to replace all associations' (enterprises') own capital with bank credit. Such a point of view is not legitimate because it is dominated by the idea of the quantitative

expansion of the credit sphere and provides the least orientation toward the stimulation of the attainment of end results.

We should also examine the question of granting credit on the basis of turnover because this creates a situation in which the bank does not effectively monitor enterprises' production and financial activity. Loans granted from a special loan account automatically cover expenditures of material assets as the appropriate documents are received. Enterprises do not properly monitor the volume and mix of the commodity stocks that are delivered to them. Credit based on turnover means that the client's accounting and cash operations are handled within the limits of a sum deposited in the form of a bank deposit. Therefore such credit cannot be classified in the category of conventional bank loan funds. In our opinion, the proceeds from the sale of products should be deposited not in a special bank loan account but in a current account based on cost accounting principles. This will give associations (enterprises) greater latitude to maneuver their own resources and will enable banks to keep a closer check on the recipients of credit.

Long-term credit granted for use as capital investments plays an important part in increasing the effectiveness of financial and credit levers. The credit is repaid by the growing volume of income of the production association (enterprise).

The economy's own funds and budget allocations will finance: the construction of new enterprises with a capital investment period in excess of 5 years; the construction of new state enterprises and complexes for the production of livestock and poultry products; work to improve the land and certain other outlays associated with the intensification of agricultural production; the construction of housing, cultural, public utility facilities in all branches of the national economy.

With the direct participation of bank credit, enterprises' own resources serve as the source for financing: the construction of new enterprises, the cost of which may be repaid in a period up to 5 years after they have been put into operation; technical retooling (for a period up to 6 years); reconstruction and expansion of existing enterprises (for the projected or planned recoupment period); the purchase of equipment and means of transport; the construction of production facilities for state agricultural enterprises and organizations and certain other expenditures.

The 26th CPSU Congress noted the need to continue the practice of basing construction projects on compensatory agreements in accordance with which new enterprises belonging to the USSR are built in collaboration with foreign firms. The latter supply credit, equipment and mechanisms for which the USSR pays for with part of the output produced at these enterprises. For the purpose of observing the deadlines and accelerating the construction of the given enterprises, compensatory projects are converted to long-term credit financing during the capital investment recoupment period with the credit being repaid primarily from profits. Banks analyze the projected economic effectiveness of planned measures for all capital investments involving long-term credits. This makes it possible to develop recommendations on improving decisions and technical and economic indicators.

During the credit repayment period, banks monitor the accumulation of funds for the prompt cancellation of indebtedness and the running-in period for newly built and activated capacities. Enterprises and economic organizations that fulfill the plan for the activation of capacities and productive fixed capital enjoy credit in excess of the annual limit. The interest rate during the credit period is lowered if productive fixed capital is put into operation ahead of schedule and is raised if the deadlines are not met.

Banks grant ministries, departments and production associations (enterprises) credit to pay for work financed by the integrated fund for the development of science and technology if this work is completed ahead of schedule.

Credit is granted (in excess of the limit on state capital investments) for highly effective measures to product new products, to improve product quality, to expand consumer goods production and to improve consumer services (with the condition that expenditures are recouped and loans are repaid in a period up to 2 years). In the process of determining the credit repayment period, up to 50 percent of the turnover tax from the sale of consumer goods produced as a result of the measures for which the credit was granted is taken into account.

The role of long-term credit intensified under the 11th Five-Year Plan. For example, it accounts for as much as 90 percent of all sources of financing for the construction of enterprises with a repayment period under 5 years; for compensatory construction projects--approximately 100 percent; for consumer goods production enterprises--over 40 percent; for technical retooling--less than 20 percent. While in 1975, the long-term indebtedness of state and cooperative enterprises and organizations was 15.8 billion rubles, in 1982 it rose to 49.1 billion rubles (i. e., increased more than threefold).

In a number of ministries, the share of long-term credit in sources of financing state planned capital investments (productive facilities) rose substantially. Thus in the USSR Ministry of the Petrochemical Industry, it is 32 percent; in the Ministry of Nonferrous Metallurgy--30 percent; the Ministry of Machine Building for Light and Food Industry--29 percent. But the share of long-term credit throughout the national economy as a whole is insignificant.

The practice of granting long-term credit for the state capital investments of client [zakazchik] construction projects attests to its advantage. Enterprises that are built on the basis of long-term credit or bank loans usually equip and run in production capacities faster than those that are funded on a nonreturnable basis. Of the total number of enterprises built with the aid of credit, up to 85 percent are put into operation on or ahead of schedule. Moreover, deadline violations in the remaining cases were negligible--from 1 to 3 months.

The decree of the CPSU Central Committee and the USSR Council of Ministers on the economic mechanism cites the expansion of long-term credit for clients as one of the directions of intensification of the role of credit

in construction. This can evidently be done by establishing a plan norm governing the participation of long-term credit in sources of financing and by seeing to it that enterprises receive allocations for capital investments on a returnable basis from higher level organs (under the bank's supervision). At the present time, production associations (enterprises) usually accumulate their own resources in an amount that frequently meets their need for capital investments. What is more, profit, amortization and certain other resources that remain free to the association (enterprise) are centrally transferred to higher level organs and are then allocated (on a nonreturnable basis) to enterprises that do not have sufficient resources. Such a practice in the intradepartmental redistribution of financial resources contradicts the basic principles of cost accounting.

The establishment of a long-term credit norm in the financing of capital investments will stimulate their rational distribution between the state budget, enterprises and higher level organs. Calculations show that the optimal credit norm is 20-25 percent. Profit distribution norms must be adjusted to take the profitability of production into account with the condition that their application not undermine the incentive to increase the profit mass and the profitability norm.

It appears expedient to use the free resources of associations (enterprises) to form funds that can be allocated to other associations (enterprises) in the form of returnable financing, i. e., credit. Upon expiration of the capital investment recoupment period, the funds obtained by these associations (enterprises) are to be returned to higher level organizations and the latter must return them to the associations (enterprises) from when they came.

There now arises the problem of further substantiating the adopted procedure for financing relatively unprofitable enterprises and enterprises that operate at a planned loss. Nonreturnable funding of enterprises is based on their actual or planned level of profitability (unprofitability). Following reconstruction, they (with few exceptions) become profitable and attain the average branch level, which confirms the expedience of financing capital investments in relatively unprofitable enterprises and enterprises operating at a planned loss from own resources and long-term bank credit. Irrespective of the development of the system of long-term credit, large-scale and particularly special-purpose expenditures must continue to be financed primarily the state budget for the most part. The reference is to large capital investments in new types of production and to the development of natural resources in hitherto undeveloped regions.

The decree of the CPSU Central Committee and the USSR Council of Ministers envisages the gradual transition in individual branches to the construction of enterprises (structures) on the basis of credit granted to contractor organizations by USSR Srobybank in the amount of the full estimated construction cost which is accepted by the general contract when finished enterprises (structures) are turned over to the client on a "turnkey" basis. These transactions are carried out over a number of years. And while the volume of "turnkey" payments in productive construction is negligible, they are dominant in civil housing construction. The essence of the



question in the settlement of commodity output and "turnkey" accounts consists in securing the activation of capacities and productive fixed capital. However given the creation of construction commodity output, the client enterprise continues to discharge the function of placing orders for the manufacture and delivery of equipment, of accepting it and partly of organizing its installation. When enterprises (structures) are turned over on a "turnkey" basis, they become the contractors' responsibility. In addition to acquiring equipment, the contractors themselves install it (using their own work force or with the aid of specialized supplier organizations and plants). Expenditures by contractor organizations on construction work and on payment for equipment from the beginning of construction of an enterprise or facility to the time they are turned over to the client are paid by bank credit.

The settlement of accounts on a commodity output and "turnkey" basis not only raises the level of fulfillment of targets for activating capacities and productive fixed capital but also reduces the volume of incomplete construction and improves the basic technical and economic indicators of the activity of contractor organizations.

An important role in the investment process belongs to machine building. Until recently, the role of machine building was limited primarily to the delivery of equipment (usually in bulk) and there was no further interest in its fate since the volume of output, the realization of profits and the formation of the economic incentive funds did not depend on whether the equipment was in operation or whether it was in warehouses at the building site. At the present time, there are several billion rubles' worth of uninstalled equipment at the building sites, including 6 billion rubles' worth of above-norm equipment. Upon learning that 770 motors were not being used, V. I. Lenin wrote: "This is unprecedented mismanagement and helplessness...Find those guilty of red tape and bureaucratism and create a noisy court trial around this case."<sup>3</sup>

Measures aimed at eliminating phenomena of this type acquire paramount significance. Installation work is now the responsibility of not only specialized organizations of construction departments but also of machine building plants that supply the equipment. Plants that are the general suppliers of total packages of production equipment, lines, units, means of mechanization, automation, control and monitoring settle accounts for totally installed equipment packages in general. Therefore the activation of equipment is an indicator that should be included in the plans of general suppliers of equipment and the industrial ministries to which they are subordinated.

Some equipment suppliers are developing the machine service sphere. For example, the 25th of October Machine Building Plant in Pervomaysk has organized a diesel service. The subdivision has support points in Leningrad, Nikolayev, Kherson and other industrial centers and regions in the nation. The plant delivers the equipment, installs it, puts it into operation and then, in the course of the customer's activity, takes charge of the technical supervision and repair of the equipment.

Such organization of the work would be effective for the technical retooling of enterprises that should be made the responsibility of plants that supply the equipment. The latter can if necessary be given the right to call in specialized construction and installation organizations to function as subcontractors.

The June (1983) Plenum of the CPSU Central Committee pointed to the need for the careful study, evaluation and conceptualization of the experience of socialist countries. Capital construction questions are also included in this category. In a number of socialist countries, it is a common practice of supplier enterprises to lease implements of labor. They also organize special service points that perform adjustment service for the lessee and organize the exchange of leased objects. The result is the more effective use of new equipment and the reduction of capital investments for specific enterprises. The study of such experience will promote the further improvement of machine service.

The technical retooling of enterprises will raise the role of credit. In such a case, suppliers must be granted credit to pay for production equipment while it is still in the manufacturing stage and to pay for equipment after a facility has been put into operation, which will lead to the reduction of time (starting with the manufacture of equipment and until it is incorporated in productive fixed capital).

Under the new conditions, the charge construction organizations pay for productive fixed capital and normed working capital is six percent of their value. Charges for above-norm reserves of material assets that are not financed by credit are collected from the share of profits that are left to associations (enterprises). At the same time, the impact of capital charges on increasing the responsibility of clients for the activation of capacities and fixed capital is extremely limited. Incomplete construction is carried on the clients' balance, is not counted as taxable capital and hence does not influence the results of their economic activity. In our view, charges should also be collected for incomplete construction that is an integral part of the clients' working capital. Charges must be collected from the profits of production associations (enterprises) and in the case of construction projects--from the reserves of ministries, departments and other organizations. Such a measure, in addition to increasing the responsibility of clients, will promote the reduction of their requests for capital investments and the optimal use of existing capacities.

#### FOOTNOTES

1. See V. I. Lenin, "Polnoye sobraniye sochineniy" [Complete Works], Vol 43, p 359.
2. The cited data do not take credit for technical retooling into account.
3. "Lenin Collection" [Leninskiy sbornik], XXXIV, pp 431-432.

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## ECONOMIC MODELING AND COMPUTER TECHNOLOGY APPLICATION

### METHODOLOGY FOR COMPARING U.S., USSR DATA DISCUSSED

Moscow VESTNIK STATISTIKI in Russian No 1, Jan 84 pp 25-33

[Article by V. Martynov, chief of the Administration for Statistics of Foreign Countries of the USSR Central Statistical Administration (CSA), candidate of economic sciences: "On Improvement of the Method of Comparing the Level of Industrial Output of the USSR and the United States"]

[Text] The decisions of the 26th CPSU Congress and subsequent plenums of the CPSU Central Committee defined the principal directions for improvement of international socioeconomic comparisons, which make it possible to describe statistically the superiority of the Soviet planned economy over the unplanned economy of the capitalist countries.

The fullest statistical description of the level of economic development can be given only with the help of value indicators expressed in national prices. Value indicators in American and Soviet statistics which bear the same name have differing economic content, since the methodology of computing them is based on fundamentally different political-economic conceptions. The standardization of the content of the value indicators being compared is one of the essential conditions for comparing levels of industrial output of the USSR and the United States. But international comparisons are not restricted to regrouping the American data in conformity with the methodological principles of Soviet statistics. Standardized value indicators of the USSR and the United States have to be converted from the national currency to a comparable currency.

Staff agencies of CEMA and the UN make international socioeconomic comparisons with the active participation of the national statistical services, which specifically prepare an extensive mass of initial data necessary for determining the coefficient for currency conversion on the basis of individual prices of identical or analogous goods.

The Administration for the Statistics of Foreign Countries of USSR CSA makes extensive use of the data of economic censuses (statistical censuses) of the United States in comparing levels of industrial output of the Soviet Union and the United States of America.

It is impossible to select analogous and identical goods and to assign to them individual prices unless one has catalogues which give a detailed technical-and-economic description of the specific goods manufactured by U.S. industry and indicating their value. But in the material of only one census of the U.S. manufacturing industry, that for 1977, is information given on 13,000 products and services classified with a seven-character code as a source of primary information for international comparative statistics. These products are grouped in 1,336 product classes (a five-character digital code) representing 452 branches (four-character code) of the manufacturing industry. Each of the 452 branches of the U.S. manufacturing industry is characterized in detail in the materials of the censuses by the following system of indicators used in international comparisons: the number of enterprises, size of the labor force, number of hours worked, wage fund, value of shipments, value of raw materials and supplies consumed, and the value added by processing.

When currency conversion coefficients are determined, figures on the volume of products shipped, which is determined by the sectoral method and by the product method, are of particular interest.

The first method is to make a global value estimate of the volume of sales of goods and services, while the second reflects the results of commercial contracts for delivery of specific products. These contracts are recorded both in physical units and also in money terms.

Figures on the volume of products shipped in physical and value terms represent that mass of data which makes it possible to ascertain the average price. In the materials of the censuses data of this kind are available on only 385 branches; only the value indicators of products shipped are given for the other 67 branches. In other words, it is possible from the materials of the censuses to determine the average prices of the products of 385 branches. These are wholesale prices of the producer enterprise; commercial contracts on the sale of products at those prices afford the possibility of reimbursing production costs and obtaining the average profit. Costs related to shipment of the products, payment of indirect taxes and excise taxes are not taken into account in setting these prices.

The agencies in the Soviet state statistical system regularly collect data on the commodity output of various products in physical terms and the value of that output. The average wholesale prices of enterprises in several hundred branches of industry can be determined from the data of uninterrupted observations. A majority of those average prices can be used for comparison with the corresponding prices of the United States.

There is no question that consolidated groups of industrial products of the Soviet Union and the United States of America bearing the same name consist of specific products which are not identical, but even one and the same articles manufactured by the industry of the USSR and the United States differ in quality. For instance, in determining the average price of cotton greige goods Soviet statisticians break them down into subgroups: sheeting (byaz'), printcloth (mitkal'), diagonal-weave fabrics (satinovyye tkani) and toweling, while American statisticians divide them into the following subgroups:



plain-weave cotton cloth, towel fabrics, suiting fabrics and coarse densely woven cotton fabrics. In spite of the differing composition of the sub-groups, figures on shipment of these products in value and physical terms make it possible to find the average weighted price for the entire group, which approximately corresponds to the term "cotton greige goods."

When currency conversion coefficients are being determined, average prices have in our opinion the main advantage over individual prices that the averaging of the individual prices makes it possible to reveal better the regulating role of value in price setting in the capitalist countries.

As we know, the sum total of prices expresses the magnitude of socially necessary expenditures in a money equivalent. Consequently, the average price is the center to which individual prices gravitate as the money expression of value.

Average prices were first used by the Administration for the Statistics of Foreign Countries of USSR CSA as initial data for determining currency conversion coefficients in international comparisons of levels of industrial output of the USSR and the United States on the basis of material of the 1972 American business censuses. The average prices were taken on the basis of calculations both in discovering the rate of exchange for conversion of value indicators from national prices to comparable prices and also in international comparisons using the data of the 1977 American business censuses.

In the conduct of this work it proved to be possible to compute for the USSR and the United States 312 average prices in dollars and rubles for homogeneous commodity groups. These average prices were determined for consolidated branches of industry as follows: industrial sector (total)--312, including: electric power industry--2, fuel industry--10, ferrous metallurgy--41, machinebuilding and metal manufacturing--71, chemical industry--64, timber and lumber, woodworking and pulp and paper industry--25, building materials industry--21, light industry--40, and the food industry--38.

The data gathered made it possible to compare levels of wholesale prices in the USSR and the United States. The results of these comparisons are expressed in the form of international individual price indices computed by two methods. The first of them ( $i_U$ ) is the U.S. price level taken as 100, and the second ( $i_S$ ) is the USSR price level taken as 100. The individual price indices computed by the first or second method are equivalent in their economic content. In other words, the currency conversion coefficient can be discovered by means of individual indices expressing the relationship both of USSR prices to U.S. prices as well as the other way about. When price levels of specific products are compared, it does not matter what is taken as the base: the USSR price level or the U.S. price level, since the individual price indices are reciprocals of one another, i.e.,  $i_U = 1:i_S$  and  $i_S = 1:i_U$ . Each of the individual indices is a specific manifestation of the currency conversion coefficient. In order to represent it in general form, the international individual price indices have to be weighted. Moreover, the individual price indices are weighted with the share that specific products have in the output of the branch, and the branch price indices are weighted with the figures on the branch structure of the industrial sector.

In international comparisons of the levels of industrial output of the USSR and the United States on the basis of the materials of 1972 business censuses the individual indices characterizing the level of average USSR prices relative to U.S. prices were weighted with the value of American output shipped, and indices characterizing the level of average U.S. prices relative to the level of USSR prices were weighted with the value of the commodity output of specific products of the Soviet Union. The commodity output of specific products differs from the volume of their shipment by the size of inventories of finished goods. The size of these inventories in the Soviet Union is relatively small. When the indicator termed "commodity output of certain products" is used in international statistical practice, it can be provisionally assumed that it is equivalent in its economic meaning to the term "value of shipments of individual products." Consequently, the difference in the system of weighting the international individual price indices does not arise out of the peculiarities of recordkeeping in American and Soviet statistics, but from the national specificity of the structure of production, from the level of labor productivity, from the level of production specialization and industrial cooperation, and from the peculiarities of the process of price setting in the USSR and the United States.

In international comparisons of levels of industrial output of the USSR and the United States based on the material of 1972 business censuses, when the currency conversion rate of the ruble was being determined against the dollar, the individual indices characterizing the relationship between average USSR and U.S. prices were aggregated in a summary price index which took into account the actual structure of production of both the Soviet Union and also the United States. The first method of computation can be represented by this formula

$$\frac{\sum p_s q_u}{\sum p_u q_u} = \sum \left( \frac{p_s}{p_u} \cdot \frac{q_u p_u}{\sum q_u p_u} \right),$$

the second method of computation by this formula

$$\frac{\sum p_s q_s}{\sum p_u q_s} = 1 : \sum \left( \frac{p_u}{p_s} \cdot \frac{q_s p_s}{\sum q_s p_s} \right).$$

In the formulas given  $p_s/p_u$  signifies the relationship between average price levels of industrial goods of the Soviet Union ( $p_s$ ) and the United States of America ( $p_u$ ) bearing the same designation;  $q_u p_u / \sum q_u p_u$  is the relative share of the value of the shipment of that group of U.S. goods in the total volume of shipped output of the branch, computed by the product method;  $q_s p_s / \sum q_s p_s$  is the share of the commodity output of the group of industrial products bearing the same name in the total volume of commodity output of the USSR branch.

The currency conversion coefficient, computed from the indicators of the structure of USSR production differs notably in its numerical value from the same currency conversion coefficient (ratio of the ruble to the dollar) calculated from the figures on the structure of U.S. output. These differences are fully substantiated in economic terms. But they create great difficulties

in the quantitative description of the process of economic comparison of the two world economic systems. That is why discovering methods of computation which make it possible to obtain currency conversion coefficients which are identical in their numerical value has great practical importance for international statistics.

One of the directions in solving this methodological problem is to reexamine the formulas of the average quantities used in building up the summary international price indices. In the practice of bilateral comparisons the USSR CSA, the Standing CEMA Commission for Cooperation in the Field of Statistics, the Statistics Division of the countries of the European Economic Community, and the UN Statistics Commission determine currency conversion coefficients on the basis of the weighted arithmetic average.

Back in 1945 V. S. Nemchinov, member of the academy, expressed an opinion about the advantages of the weighted geometric average: "Consequently, in all cases when the index is to describe a set of heterogeneous elements, the aggregate index is the most correct. But in certain cases it also makes sense to use the geometric average. One such case is describing changes in the purchasing power of the money unit (ruble, dollar, pound sterling, and so on)."

The international aggregate price index can be computed on the basis of the weighted geometric average. But for practical purposes it is more convenient to use the weighted logarithmic average:

$$\log G = \frac{w_1 \log I_{11} + w_2 \log I_{12} + \dots + w_j \log I_{1j}}{w_1 + w_2 + \dots + w_j}.$$

Since  $w_1, w_2, \dots, w_j$  are the relative indicators of the structure of production, then  $\sum w_j = 100$ . Consequently, the formula of the weighted logarithmic average can be written as  $\log G = \sum w_j \log I_{1j}$ . The weighted geometric average was first used in determining the purchasing power of currencies of the countries of Latin America for 1968. It was called the Walsh formula after the scientist who mathematically described the program of international comparisons of indicators of that region of the world.\*\*

The Walsh index was computed with the conventional formula of the weighted geometric average, i.e., using base weights, or more precisely, the weight of the base country. In international comparisons levels of national prices of at least two countries are being compared, and therefore indicators of the structure of production of both the country being compared and the country against which it is being measured may be used as weights. It is not possible using this method of computation to obtain a uniform numerical value of the international price index. In making international comparisons the advantage of the geometric mean over the arithmetic mean is manifested

\* Nemchinov, V. S., "Izbrannyye proizvedeniya" [Selected Works], Vol 2, Moscow, Nauka, 1967, p 387.

\*\* "Prices and Purchasing Power Parities in Latin America, 1960-1972," Washington, 1978.

especially noticeably when indicators of a standardized structure of production or consumption are used as the system of weights.

The statistical basis for determining a weighting system of this kind are indicators of the structure of production of the country taken as the basis of comparison. For instance, if the currency conversion coefficient characterizing the purchasing power of the ruble against the dollar is being computed, indicators of the structure of U.S. production are taken as the base; in determining the currency coefficient expressing the purchasing power of the dollar against the ruble, the indicators of the structure of production of the Soviet Union are taken as the basis of comparison.

The structure of production of the country being compared is determined by computation--the relevant indicators of the structure of the base country are adjusted by indices of the physical volume. Algebraic transformations of the index numbers can be used to easily prove that this kind of adjustment is possible.

If the volume in value terms of the commodity group  $i$  of the country  $s$  is denoted as  $q_i^s p_i^s$ , and the international index of the physical volume computed on the basis of physical indicators as  $q_i^u q_i^s$ , in which  $u$  is the country being compared, then

$$q_i^s p_i^s \cdot \frac{q_i^u}{q_i^s} = q_i^u p_i^s.$$

The national indicators of the structure of production

$$\frac{q_i^s p_i^s}{\sum q_i^s p_i^s}$$

( $i = 1, 2, \dots, n$ , in which  $n$  is the number of commodity groups), after adjustment of each commodity group, will take the form:

$$\frac{q_i^u p_i^s}{\sum q_i^u p_i^s}.$$

It is legitimate to assume that this relationship characterizes the indicators of the structure of production of the countries  $s$  and  $u$  expressed in a single currency.

The principle expounded for standardization of the indicators of the structure of production for the purposes of obtaining reciprocal international price indices was discussed and approved by the Scientific Methodology Council of the USSR CSA in 1981.

In the comparison of the volumes of industrial output of the USSR and the United States based on the data of the 1977 American censuses, the commodity



structure of each of the nine consolidated industrial branches was standardized in stages.

For instance, in the first stage of the work of determining the indicators of the standardized commodity structure, for example, of the fuel industry, the following computations are made (the figures are hypothetical):

Table 1

<u>Indicator</u>	<u>Product</u>				
	<u>Petro- leum</u>	<u>Gasoline</u>	<u>Motor Fuel</u>	<u>Gas</u>	<u>Coking Coal</u>
1. Commodity structure of the USSR branch on the basis of national value data, %	44.78	19.97	17.82	14.38	3.05
2. Relationship of the physical volumes of output of the products in the commodity group of the United States and USSR (United States relative to the USSR, %)	0.75	4.51	1.84	1.83	0.32
3=(1 x 2). Product of the indicators of the commodity structure by the index numbers of the physical volumes	33.59	90.06	32.79	26.32	0.98
4. Commodity structure of the U.S. branch in USSR prices, %	18.28	49.01	17.85	14.33	0.53
5=(1 + 4):2. Averaged commodity structure of the branches of the USSR and the United States, %	31.53	34.49	17.84	14.36	1.79

Line 5 reflects the results of standardization of the indicators of the commodity structure of the fuel industry of the USSR and the United States on the basis of the ruble.

In the second stage of the work indicators of the standardized commodity structure of the fuel industry of the USSR and the United States were computed on the basis of the dollar.

Table 2

<u>Indicator</u>	<u>Product</u>				
	<u>Petro- leum</u>	<u>Gasoline</u>	<u>Motor Fuel</u>	<u>Gas</u>	<u>Coking Coal</u>
1. Commodity structure of the United States branch on the basis of national value data, %	25.59	41.50	17.03	15.70	0.18

Table 2 (continued)

Indicator	Product				
	Petro- leum	Gasoline	Motor Fuel	Gas	Coking Coal
2. Relationship of the physical volumes of output of the products in the commodity group of the USSR and United States (USSR relative to the United States, %)	1.33	0.22	0.54	0.55	3.17
3=(1 x 2). Product of the indicators of the commodity structure by the index numbers of the physical volumes	34.03	9.13	9.20	8.64	0.57
4. Commodity structure of the USSR branch in U.S. prices, %	55.27	14.83	14.94	14.03	0.93
5=(1 + 4):2. Averaged commodity structure of the branches of the United States and the USSR, %	40.43	28.17	15.98	14.87	0.55

The third stage of the work consisted of averaging the indicators of the standardized commodity structure, computed on the basis of the ruble and the dollar.

Table 3

Indicator	Product				
	Petro- leum	Gasoline	Motor Fuel	Gas	Coking Coal
Standardized commodity structure of the branches:					
1. USSR and United States on the basis of prices of the Soviet Union, %	31.53	34.49	17.84	14.35	1.79
2. United States and USSR on the basis of prices of the United States, %	40.43	28.17	15.98	14.87	0.55
3=(1 + 2):2. Averaged standardized commodity structure of the branches of the USSR and United States, %	35.98	31.33	16.91	14.61	1.17

The fourth stage of the work was to weight the individual price indices with the indicators of the averaged standardized commodity structure.

Table 4

<u>Indicator</u>	<u>Product</u>		
	<u>Petroleum</u>	<u>Gasoline</u>	<u>Motor Fuel</u>
Relationship of the average group prices			
1. USSR and United States, rubles per dollar	0.17	0.27	0.24
2. United States and USSR, dollars per ruble	6.02	3.66	4.12
Product of the indicators of the averaged standardized commodity structure by ...			
3. Logarithm of the price index, rubles per dollar	$0.36 \times (-1) \times 2,345$	$0.31 \times (-1) \times 4,314$	$0.17 \times (-1) \times 3,802$
4. Logarithm of the inverse price index, dollars per ruble	$0.36 \times 0 \times 7,796$	$0.31 \times 0 \times 5,635$	$0.17 \times 0 \times 6,149$

<u>Indicator</u>	<u>Product</u>	
	<u>Gas</u>	<u>Coking Coal</u>
Relationship of the average group prices		
1. USSR and United States, rubles per dollar	0.21	0.66
2. United States and USSR, dollars per ruble	4.73	1.51
Product of the indicators of the averaged standardized commodity structure by ...		
3. Logarithm of the price index, rubles per dollar	$0.15 \times (-1) \times 3,222$	$0.01 \times (-1) \times 8,195$
4. Logarithm of the inverse price index, dollars per ruble	$0.15 \times 0 \times 6,749$	$0.01 \times 0 \times 1,790$

The antilogarithms of the totals in Line 3 of Table 4 characterize the price relation of products of the USSR fuel industry to the prices of the products of the same U.S. branch, while the antilogarithms of the totals in Line 4 characterize the price relations of products of the U.S. fuel industry to the prices of the products of the same USSR branch.

These international price indices are reciprocals of one another. The results of the calculations according to the procedure set forth are unquestionably estimates by their nature, since they have been obtained from the data of a sample of volumes of shipments produced by the industry of both the USSR and also the United States.

In aggregating the sectoral international price indices into a summary currency coefficient for converting national value indicators in a standard

currency for purposes of international comparisons, the value of the shipment of all products intended both for the given branch and also for other branches should be taken into account. But solving the methodological problem of standardizing the economic content of the summary currency coefficient goes beyond this. In international comparisons attention is also paid to the fact that the commercial activity of U.S. industrial firms is not confined to the trade in goods. Industrial enterprises not only manufacture products, but also perform a large volume of contract work (research and product development, assembly and installation of production equipment, equipment repair, the sale of metal scrap, the reselling of products which have not undergone any sort of conversion at the enterprise in question).

The volume of products shipped, as computed in American statistics by the method of the enterprise, is adjusted in international comparisons of levels of industrial output of the USSR and United States by the magnitude of the change in value of inventories and work in process for purposes of comparing it to the indicator referred to in Soviet statistics as "gross output."

The standardized commodity structure of the branches of industry ascertained on the basis of these indicators can be regarded as a system of weights of the summary international price index expressing the real parity of the currencies. Algebraically, this summary currency conversion coefficient can be written as follows:

$\Sigma p^u / \Sigma p^s$  (dollar to ruble)

$\Sigma p^s / \Sigma p^u$  (ruble to dollar)

These summary indices, calculated from the formula of the weighted geometric means, are reciprocals of one another, so that using them to convert value indicators from the national currency to the comparable currency makes it possible to achieve reversibility and to obtain a summary index of the physical volume that shows the results of comparison of levels of industrial output of the USSR and the United States in their most general form.

The indicator known as "USSR gross output" can be expressed algebraically as  $\Sigma Q^s p^s$ , and the indicator known as "total volume of U.S. output computed by adjusting the indicator of output shipped" as  $\Sigma Q^u p^u$ .

When international comparisons are being made, the value indicators are converted from the national currency to the comparable currency by the direct method. This can be written algebraically as follows:

$$\Sigma Q^s p^s \cdot \frac{\Sigma p^u}{\Sigma p^s} = \Sigma Q^s p^u,$$

$$\Sigma Q^u p^u \cdot \frac{\Sigma p^s}{\Sigma p^u} = \Sigma Q^u p^s.$$

This conversion affords the possibility of discovering the relationship between the levels of industrial output by two methods--on the basis of Soviet Union prices:  $\Sigma Q^s p^s / \Sigma Q^u p^s$ , or on the basis of U.S. prices:  $\Sigma Q^s p^u / \Sigma Q^u p^u$ . This relationship will always be expressed by a provisional quantity. But it



is made considerably less provisional as a function of the accuracy of determination of the currency conversion coefficient.

Perfecting the procedure for computing the currency conversion coefficient is not restricted to solving the problem related to direct comparison of national price levels. This is a painstaking job which cannot be done annually because the necessary initial material is lacking. But a great need is felt in the practice of day-to-day international computations for developing a methodology that would make it possible to determine currency coefficients for each year by a comparatively simple procedure. One of the directions toward achieving this goal is extrapolation of the data of international comparisons.

But the reservation should immediately be stated that the possibility of using this method in the practice of international comparative statistics is quite limited. In international comparisons only data characterizing the relationship between average price levels can be extrapolated. This can be easily seen:

$$I_{77} = \frac{\sum p_{77}^u w_{77}^s}{\sum p_{77}^s w_{77}^s} = \frac{\sum \left( \frac{p_{77}^u}{p_{77}^s} w_{77}^s \right)}{\sum w_{77}^s} = \sum \left( \frac{p_{77}^u}{p_{77}^s} \cdot w_{77}^s \right).$$

Reported data of the Soviet Union make it possible to determine annually the standardized system of weights ( $w_{78}^s$ ), and from the materials of current American and Soviet statistics it is possible to compute price indices for consolidated groups of goods for each year. Consequently, it is quite possible to do calculations with the formula

$$\frac{p_{77}^u \cdot \frac{p_{78}^u}{p_{77}^u}}{p_{77}^s \cdot \frac{p_{78}^s}{p_{77}^s}} = \frac{p_{78}^u}{p_{78}^s}.$$

This initial data also make it possible to construct a summary conversion index for the years following the census:

$$I_{78} = \frac{p_{78}^u}{p_{78}^s} \cdot w_{78}^s.$$

The computational scheme which has been presented indicates that in the practice of international comparative statistics only simple indices can be extrapolated. Summary aggregate international price indices are not subject to extrapolation. It is theoretically unsound to extrapolate the results of international comparisons themselves showing the relationship of levels of economic development of countries being compared by means of national indices of physical volume. The illegitimacy of such calculations is manifested above all in the fact that the officially published dynamic series are computed in

national prices, while the international indices of the physical volume are structured on the basis of value indicators expressed in the uniform currency.

In addition, the figures on dynamic behavior do not take into account changes in either price levels or production structure. These factors have a large influence on the magnitude of the regional index of the physical volume, and for that reason must absolutely be included in the computation when international comparisons are made.

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**DATE FILMED**

23 July 1984